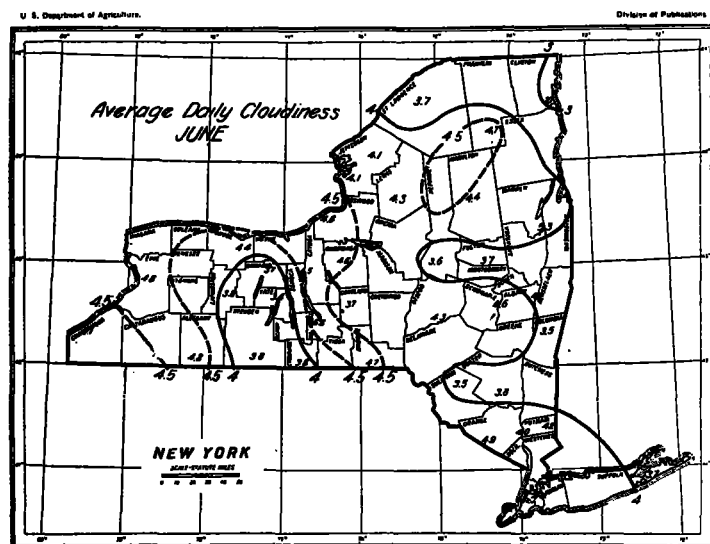


west-central section can be explained by a glance at the contour map where it can be shown to coincide fairly well with a tongue of relatively low land running down from Lake Ontario and bounded on either side by land 500 to 1,000 feet higher. This is the region of the "Finger Lakes." The eastern half of the State, while on the whole much less cloudy than the western, shows maxima and minima clearly influenced by the



land elevation. For example, the clearest section is the west shore of Lake Champlain under the lee of the Adirondacks with an approach to it in Ulster County under the lee of the Catskills and the high plateau to the west; while the cloudiest spot in the eastern half of the State seems to be Schoharie County, at the end of a narrow trough of low land extending northwest to Lake Ontario through which moisture-laden winds may pass to be condensed there on the northern slopes of the Cats-

kills. The relatively high cloudiness around New York City is probably local and due to city smoke and sea fogs or those arising from the harbor, which are at the maximum at about this time.

Turning to the June map we find much greater uniformity throughout the State, owing to the facts that the northwest winds from the lakes are more rare and that the land surface is warmer, but the minima over Lake Champlain and west-central New York still persist, although in not so pronounced a form. The influence of the mountains is still shown, and a new minimum has appeared in eastern Long Island. This last is probably due to causes mentioned in the author's earlier paper on the climate of this region published in *Climatological Data for New York in 1917*, viz, that this region is on the edge of the cloud belt resulting from St. Lawrence Valley storms, which are the prevalent summer type, and to the relative infrequency of thunderstorms, due to the proximity of the ocean and the trend of the coast which tends to keep the temperature low and uniform.

These maps show quite clearly the relation of wind, large water surfaces, and land elevation to cloudiness. Further study would probably show a correspondence with rainfall, and especially snowfall, as it is well known that the southeast shore of Lake Ontario is one of the snowiest regions of the United States.

AMATEURS RECEIVE FORECASTS BY WIRELESS TELEPHONE.

A letter from Mr. Eric R. Miller, of the Weather Bureau station at Madison, Wis., states that the Physics Department of the University of Wisconsin has for several months been sending out at 10 a. m. the weather forecast for Wisconsin. The wave length is 1,000 meters. Plans are under way to supply this information by wireless telephone. The apparatus is powerful enough for the messages to be audible to amateurs throughout the southern half of Wisconsin.

MODIFYING FACTORS IN EFFECTIVE TEMPERATURE; OR, A PRINCIPLE OF MODIFIED THERMAL INFLUENCE ON ORGANISMS.¹

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In connection with the writer's studies of the application of the bioclimatic law to the forecasting of the dates of events in the seasonal activities of insects, the optimum time to apply remedies for their control, other periodical farm practices, the latitude and altitude limits of distribution of organisms, etc., it has been found that the departures of the recorded variable from the computed constant dates of events are, in general, progressively earlier with higher latitude and altitude, or vice versa. It has also been found that certain regions of the United States are characterized by later departures, while the reverse is true of other regions.

According to the laws of temperature control of the seasonal activity of organisms, it has been assumed that a temperature above 45° to 50° F. is required to stimulate activity or that a given accumulation or sum of heat above the effective is required for the development of seasonal events.

It would seem, therefore, that an explanation of the regional departures might be found in the prevailing temperature, but an effort to apply this principle led

to confusion rather than to an explanation of the causes of such variations.

It is natural to assume that acceleration of activity, represented by an early departure from the constant, would be associated with a relatively higher temperature, but when the mean temperatures of the regions of uniformly early or late departures were studied it was found that, as related to the major regions, progressively higher mean temperature with lower latitude and altitude was associated with progressively later departures, and vice versa.

It is plain, therefore, that, while temperature is an important factor of control, there are other factors that modify its effective influence which are related to latitude, longitude, and altitude. It seems (as indicated by the writer in SUPPLEMENT 9 of the MONTHLY WEATHER REVIEW, 1918) that the amount and character of daylight, sunshine, etc., exert an important modifying effect on life activities and that this effect is not reflected in the recorded temperature. It would appear, therefore, that it is in the variation of the effective influence of light, and evidently other elements of climate, with varia-

¹ Presented before American Meteorological Society, Washington, D. C., Apr. 22, 1920.